AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions of the claims in the Application. With reference to the listing it is noted that, herewith, claims 1, 2, and 6 are canceled without prejudice or disclaimer, and claims 14 and 15 are added. No new matter has been added.

Listing of Claims

Claim 1 (Canceled)

Claim 2 (Canceled)

3. (Withdrawn) A battery charger for charging a battery, comprising:

a controller adapted to detect a charging voltage and charging current of the battery and to control charging of the battery in accordance with a detection result;

a converter adapted to control a voltage and current of a DC power supplied to the battery;

a first input connector adapted to supply the input DC power to said converter; and

a second input connector adapted to supply the input DC power to said controller connected to an output of said converter.

4. (Withdrawn) The charger according to claim 3, further comprising a detector adapted to detect whether a plug is connected to said second input connector,

wherein said controller is adapted to set a quick charging start voltage of the battery in

accordance with a detection result of said detector.

5. (Withdrawn) The charger according to claim 4, wherein when the plug is connected to said second input connector, said controller is configured to set a higher quick charging start voltage than in a case wherein no plug is connected to said second input connector.

Claim 6 (Canceled)

7. (Withdrawn) A control method of a battery charger having a converter adapted to control a voltage and current of a DC power supplied to a battery through a switch, a first input connector which supplies the input DC power to the converter, a second input connector adapted to supply the input DC power to the switch, and a detector adapted to detect whether a plug is connected to the second input connector, said method comprising steps of:

setting a quick charging start voltage of the battery in accordance with a detection result of the detector; and

detecting a charging voltage and a charging current of the battery and controlling the switch in accordance with a detection result to control charging of the battery.

8. (Withdrawn) A computer program product storing a computer readable medium comprising a computer program code, for a control method of a battery charger having a converter adapted to control a voltage and current of a DC power supplied to a battery through a switch, a first input connector adapted to supply the input DC power to the converter, a second input connector adapted to supply the input DC power to the switch, and a detector adapted to detect whether a

3

plug is connected to the second input connector, said method comprising steps of:

setting a quick charging start voltage of the battery in accordance with a detection result of the detector; and

detecting a charging voltage and a charging current of the battery and controlling the switch in accordance with a detection result to control charging of the battery.

9. (Withdrawn) A battery charger for charging a battery, comprising:

a controller adapted to detect a charging voltage and charging current of the battery and to control charging of the battery in accordance with a detection result;

a connector adapted to charge the battery from a detachable plug and to receive supply of a DC power that operates said controller; and

a reset unit adapted to reset an operation of said controller when a voltage supplied to said controller decreases,

wherein said controller is adapted to execute intermittent charging when the charging current is not more than a first threshold value I_{th1}.

10. (Withdrawn) The charger according to claim 9, wherein said controller is adapted to start quick charging when the charging voltage exceeds a predetermined value after a start of charging of the battery, to start timer-controlled supplemental charging when the charging current is not more than a second threshold value I_{th2}, to start the intermittent charging when the charging current is not more than a third threshold value I_{th3}, and to end charging under the timer control, and

wherein the threshold values of the current have a relationship given by $I_{th1} < I_{th3} < I_{th2}$.

11. (Withdrawn) A control method of a controller of a battery charger having a connector adapted to charge a battery from a detachable plug and to receive supply of a DC power that operates the controller, and a reset unit adapted to reset an operation of the controller when a voltage supplied to the controller decreases, said method comprising steps of:

detecting a charging voltage and a charging current of the battery and controlling charging of the battery in accordance with a detection result; and

executing intermittent charging when the charging current is not more than a threshold value I_{th1}.

12. (Withdrawn) A computer program product storing a computer readable medium comprising a computer program code, for a control method of a controller of a battery charger having a connector adapted to charge a battery from a detachable plug and to receive supply of a DC power that operates the controller, and a reset unit adapted to reset an operation of the controller when a voltage supplied to the controller decreases, said method comprising steps of:

detecting a charging voltage and a charging current of the battery and controlling charging of the battery in accordance with a detection result; and

executing intermittent charging when the charging current is not more than a threshold value I_{th1}.

13. (Withdrawn) A battery charger for charging a battery with an input DC power having a voltage and a current, comprising:

a converter adapted to control supply of the voltage and the current of the input DC

5

power to the battery and having a first input connector adapted to electrically connect the input DC power to the converter, and a second input connector adapted to electrically connect the input DC power to an output of the converter;

a controller connected to the output of the converter and adapted to detect and to control charging of the battery in accordance with a voltage and a current of the battery;

a switch adapted to selectively route the input DC power in accordance with the voltage of the input DC power to one of the first input connector and the second input connector;

a detector adapted to detect whether a plug is connected to the second input connector; and

a reset unit adapted to reset an operation of the controller when a voltage supplied to the controller decreases,

wherein the controller is adapted to set a quick charging start voltage of the battery in accordance with a detection result of the detector, and wherein the controller executes intermittent charging when the charging current is not more than a first threshold value I_{th1}.

14. (New) A battery charger for charging a battery, comprising:

a power input unit, adapted to input direct current power;

a detector, adapted to detect voltage of the input direct current power;

a converter, adapted to convert the input direct current power to output converted direct current power having a voltage different from a voltage of the input direct current power; and

a controller, adapted to control a switch, which changes an object of supply of the input direct current power, in accordance with a voltage detected by said detector so that the converted direct current power is supplied to the battery when the detected voltage is higher than a charge

6

voltage of the battery, and the input direct current power is supplied to the battery without changing the voltage of the direct current power with said converter when the detected voltage is equal or lower than the charge voltage.

15. (New) A control method of a battery charger having a power input unit which inputs direct current power, a detector which detects voltage of the input direct current power, and a converter which converts the input direct current power to output converted direct current power having a voltage different from a voltage of the input direct current power, the method comprising:

      detecting the voltage of the input direct current power by using the detector; and

      controlling a switch, which changes an object of supply of the input direct current power, in accordance with the detected voltage so that the converted direct current power is supplied to the battery when the detected voltage is higher than a charge voltage of the battery, and the input direct current power is supplied to the battery when the detected voltage is equal or lower than the charge voltage.